UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE

and

AGRICULTURAL RESEARCH DIVISION
UNIVERSITY OF NEBRASKA-LINCOLN

and

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

and

IOWA AGRICULTURE EXPERIMENT STATION
IOWA STATE UNIVERSITY

and

PURDUE AGRICULTURAL RESEARCH PROGRAM
PURDUE UNIVERSITY

NOTICE OF RELEASE OF 'SHAWNEE' SWITCHGRASS

The Agricultural Research Service, United States Department of Agriculture (ARS), the Agricultural Research Division of the University of Nebraska-Lincoln (NARD), the Natural Resource Conservation Service, United States Department of Agriculture (NRCS), Iowa Agriculture Experiment Station, and the Purdue Agricultural Research Program announce the release of 'Shawnee' switchgrass (*Panicum virgatum* L.). The variety was developed in cooperative USDA-ARS and University of Nebraska research at the University of Nebraska-Agricultural Research & Development Center, Mead, NE by Kenneth P. Vogel, Research Geneticist, USDA-ARS, using plant germplasm from the Elsberry Plant Materials Center, NRCS-USDA. The variety was evaluated in cooperative trials with USDA-ARS, University of Nebraska, Iowa State University, and Purdue University that were funded in part by the Oak Ridge National Laboratory, U.S. Department of Energy.

Shawnee was developed by a single cycle of restricted, stratified mass selection using the cultivar 'Cave-in-Rock' as the base population. In 1984, a 960-plant, space-transplanted selection nursery was established at the Nebraska Agricultural Research and Development Center using greenhouse grown seedlings. In 1985, one-third of the plants were visually selected for agronomic traits and those plants were harvested for forage yield. Forage samples from the harvested plants were analyzed for in vitro dry matter digestibility (IVDMD). Seventy-eight plants were selected for polycrossing in the spring of 1988 using a selection index that equally weighted forage yield and high IVDMD. The selected plants also had good persistence and were relatively free of diseases. Ramets of the selected plants were transplanted into a replicated, space-planted polycross nursery. Seed harvested from the polycross nursery was used to plant evaluation trials. The polycross nursery is also the breeder seed field for the cultivar.

Replicated space-planted and solid stand or sward yield trials were established at Mead, Nebraska, Ames, Iowa, and West Lafayette, Indiana in 1990. The evaluation trials were sampled for IVDMD at a vegetative and reproductive growth stage (panicle emergence) and were harvested for forage yield at the time of panicle emergence and after a killing frost. Shawnee had higher yields and higher IVDMD at both the vegetative and reproductive stages of growth than Cave-in-Rock at the three locations in the space planted trials. The forage yield differences were not expressed in the sward plots; both cultivars had similar forage yields averaged over locations. Shawnee was 16 and 13 grams per kilogram higher in IVDMD than Cave-in-Rock, respectively, at both vegetative and reproductive stages of growth averaged over locations for the sward trials. It was also one day later in maturity. Shawnee was similar to the high IVDMD cultivar 'Trailblazer' in vegetative stage IVDMD but averaged 18 grams per kilogram higher in IVDMD at the reproductive stage of growth. In grazing trials at Mead, Nebraska, a 10 grams per kilogram improvement in IVDMD has been shown to have a net value of over $10 per acre to a cattle producer. In sward trials, Shawnee had larger forage yields than Trailblazer at Mead, Nebraska, Ames, Iowa, and West Lafayette, Indiana; and over locations averaged 20 percent higher in forage yield In trials conducted in Arkansas by the Arkansas Agricultural Experiment Station, Shawnee had higher or equivalent yields to Cave-in-Rock and had significantly higher yields than Trailblazer. The justification for the release of Shawnee is its improved forage quality as measured by IVDMD in comparison to Cave-in-Rock and improved forage yield in comparison to Trailblazer. It is named after the Shawnee National Forest in Southern Illinois which is near the location where the germplasm for the cultivar was originally collected

Shawnee is adapted to USDA plant hardiness zones 5,6, and 7 east of 100° W. Longitude. Shawnee is an upland, octaploid switchgrass. Seed propagation of Shawnee is restricted to two generations of increase from Breeder seed, one each of Foundation and Certified seed Breeder seed (Syn 1) is maintained by the cooperative ARS and University of Nebraska grass breeding project at Lincoln, Nebraska. Foundation seed will be maintained and distributed by the Foundation Seed Division of the University of Nebraska according to allocation policies of the University of Nebraska. The USDA-ARS and USDA-NRCS have no seed for distribution.

Administrator, U.S. Department of Agriculture, Agricultural Research Service	JUL 13 1995 Date
Director, Agricultural Research Division, University of Nebraska	May 26, 1995 Date
Chief, United States Department of Agriculture Natural Resources Conservation Service	6-8-95 Date
Dean, Iowa Agriculture Experiment Station **Iowa State University**	6-33-95 Date
Director, Agricultural Research Program, Purdue University	6/30/95 **Date**